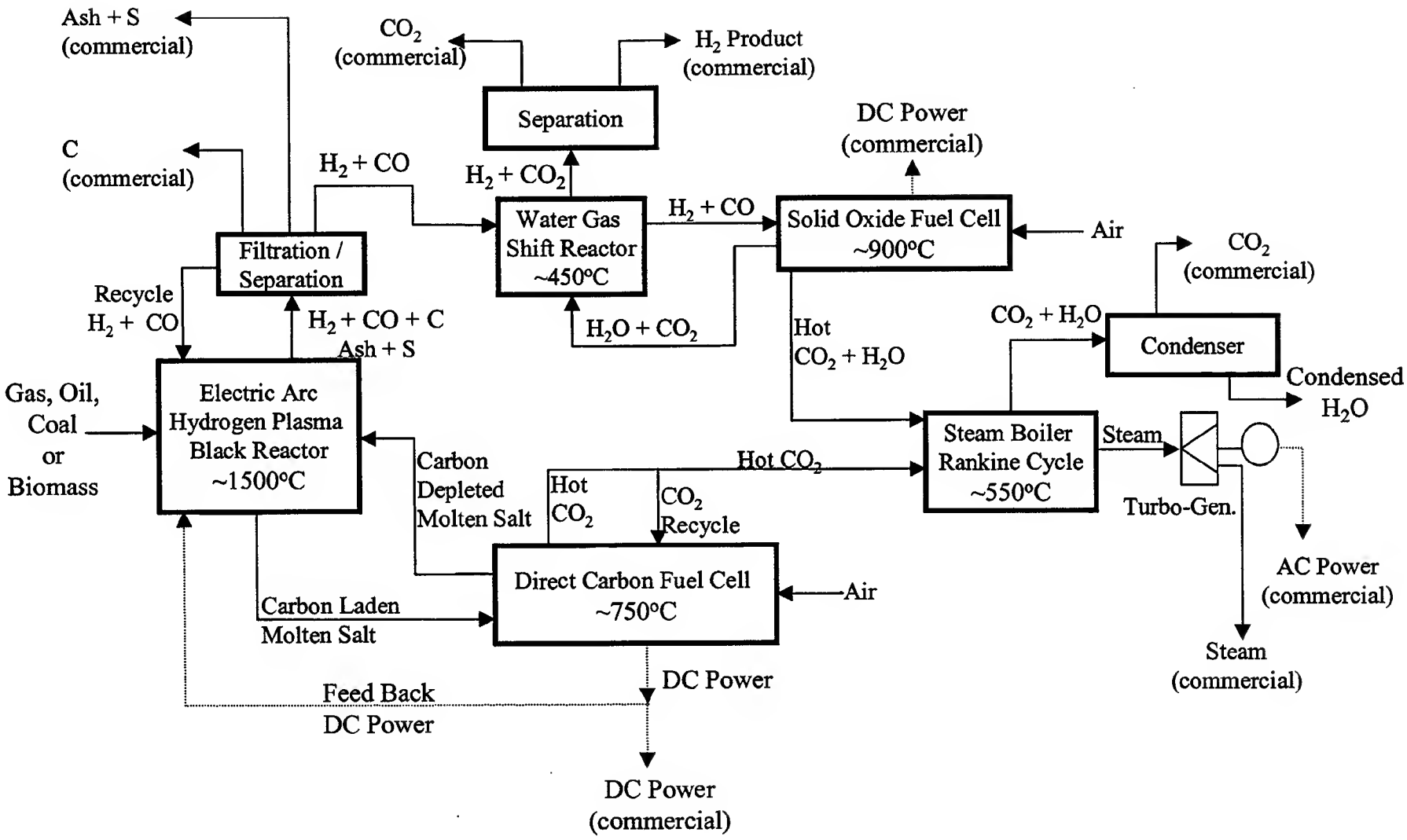
Ash + S
(commercial)
C
(commercial)
Filtration /
Separation
Recycle
H_2 + CO
H_2 + CO + C
Ash + S
Gas, Oil,
Coal
or
Biomass
Electric Arc
Hydrogen Plasma
Black Reactor
~1500°C
Carbon
Depleted
Molten Salt
Carbon Laden
Molten Salt
CO_2
(commercial)
H_2 Product
(commercial)
Separation
H_2 + CO_2
H_2 + CO
Water Gas
Shift Reactor
~450°C
H_2O + CO_2
Hot
CO_2
Hot CO_2
CO_2
Recycle
Direct Carbon Fuel Cell
~750°C
Air
Feed Back
DC Power
DC Power
DC Power
(commercial)
DC Power
(commercial)
Solid Oxide Fuel Cell
~900°C
Air
Hot
CO_2 + H_2O
Steam Boiler
Rankine Cycle
~550°C
CO_2 + H_2O
Condenser
CO_2
(commercial)
Condensed
H_2O
Steam
Turbo-Gen.
AC Power
(commercial)
Steam
(commercial)

FIG. 1